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ECO PLATFORM EPD VERIFIED

Owner: Nymølle Stenindustrier A/S

Katholm Gravel Pit

No.: MD-25066-EN
Issued: 08-08-2025
Valid to: 08-08-2030

3rd PARTY **VERIFIED**

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | **ISO 14025 & EN 15804**

Owner of declaration
Nymølle Stenindustrier A/S
Østre Hedevej 2
4000 Roskilde
CVR: 48 88 54 11
www.nymoelle.dk

Programme
EPD Danmark
www.epddanmark.dk

☐ Industry EPD
☒ Product EPD

☒ Product specific
☐ Average
☐ Worst Case

Declared product(s)
Aggregates for construction.

Number of declared datasets/product variations: 1

Production site
Katholm grusgrav
Glatved Strandvej 65,
8444 Balle, Denmark

Use of Guarantees of Origin
☒ No certificates used
☐ Electricity covered by GoO
☐ Biogas covered by GoO

Declared/ functional unit
[1 ton]

Year of production site data (A3)
Average for one year, based on data from the years 2022 and 2023.

EPD version
Version: 1, [08-08-2025]

Issued: 08-08-2025
Valid to: 08-08-2030

Basis of calculation
This EPD is developed and verified in accordance with the European standard EN 15804+A2.

Comparability
EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

Validity
This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use
The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

EPD type
☐Cradle-to-gate with modules C1-C4 and D
☒Cradle-to-gate with options, modules C1-C4 and D
☐Cradle-to-grave and module D
☐Cradle-to-gate
☐Cradle-to-gate with options

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal ☒ external

Third party verifier:

Guangli Du, Aalborg University

Martha Katrine Sørensen
EPD Danmark

Life cycle stages and modules (MND = module not declared)																
Product			Construction process		Use							End of life				Beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

Product information

Product description

The main product is shown in the table below.

Product No.	Name	Weight-% of declared product	Description and fraction
1	Stabilgrus	100%	Construction work 0-32 mm

Product packaging:

No packaging is used for the products.

Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of aggregates on the production site located in Katholm, Denmark. Product specific data are based on average values collected in the period 2022-2023. Background generic data are based on LCA SimaPro software 9.6.0.1 Developer and Ecoinvent 3.10.

Generally, the used background datasets are of good quality, and the processes which have the largest quantities and environmental impacts are only a couple of years old. Only three sub-processes for chemicals have poor quality for time representativeness, and these constitute a very low quantity and impact. The technical representativeness is good where data represents processes from products with similar technology and only smaller deviations. Geographical representativeness is also good where data generally represents average data from an area where the area under study is included.

Hazardous substances

The products from Nymølle Stenindustrier A/S does not contain substances listed on the "Candidate List of Substances of Very High Concern for authorisation"

(http://echa.europa.eu/candidate-list-table)

Product(s) use

Fill aggregates for construction.

Essential characteristics

The products consist of glacial meltwater deposits from the last ice age. The materials are a mixture of magmatic rocks, flint and limestone.

Further technical information can be obtained by contacting the manufacturer or on the manufacturer's website: www.nymoelle.dk

Reference Service Life (RSL)

Not applicable.

Picture of product(s)

Stabilgrus

LCA background

Declared unit

The LCI (Life Cycle Inventory) and LCIA (Life Cycle Impact Assessment) results in this EPD (Environmental Product Declaration), relates to 1 ton of aggregates for construction.
The product consists of glacial meltwater deposits from the last ice age. The materials consist of sand gravel and stone and are a mixture of magmatic, flint and limestone material.

Name	Value	Unit
Declared unit	1	ton
Conversion factor to 1 kg.	0.001	-
Final products	**Product no.**	**Density (kg/m^3)**
Stabilgrus	1	1 750

Production

The production process involves excavating the material using a wheel loader. Through sieves, the material is sorted into different sizes, and the larger fractions are crushed. The product is collected at the gravel pit and transported to the final destination. The process is illustrated in the flow diagram below.

The process involves the removal of natural resources. These are not restored. After excavation, the areas can be used for extensive agriculture or left to naturally regenerate for recreational purposes. Nymølle Stenindustrier states that they will actively create favorable habitats for wildlife and plants by establishing lakes, shallow water zones, and areas with varying soil nutrient content. This initiative aims to foster high biodiversity within a short period while also making the area suitable for recreational activities.

Functional unit

1 ton of product.

PCR

This Environmental Product Declaration, EPD, is developed according to the core rules for the product category of construction products in EN 15804, and PCR 2019:14 Construction products published by EPD-International.

Energy modelling principles

Foreground system:

The products are produced using electricity modelled as Danish residual electricity mix from 2022 in the production.

Information about the energy mix in the foreground system:

Energy mix	EF	Unit
Residual mix	0.557	kg CO_2 e/kWh

Background system:

Upstream processes are modelled using national energy mixes. Downstream processes are modelled using national energy mixes.

Flowdiagram

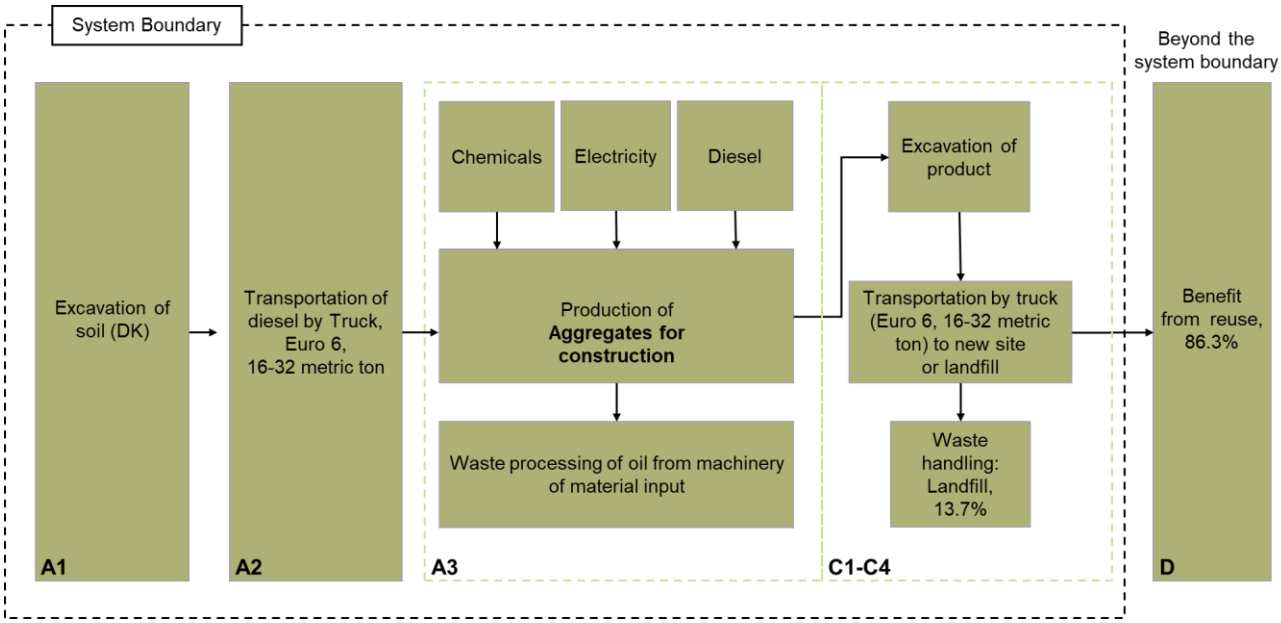

Figure 1- Visualization of life cycle stages

System boundary

This EPD is based on a cradle-to-gate LCA with modules C1-C4 and D, in which 100 weight-% has been accounted for.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

The environmental impact from infrastructure, construction, production equipment, and tools that are not directly consumed in the production process are not accounted for in the Life Cycle Inventory (LCI). Personnel-related impacts, such as transportation to and from work, are neither accounted for in the LCI.

The specific substances of the various chemicals (oils, lubricants etc.) are based on data sheets and online information. Economic averaging and allocation were not applied because the gravel pit produces only one product, and therefore allocation was not necessary.

Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials

The module encompasses the extraction and refinement of raw materials by Nymølle Stenindustrier which in this case includes removal of topsoil and excavation of raw materials.

A2 – Transport to the production site

The main resource used at the production site is diesel which is supplied to Nymølle Stenindustrier in Katholm through fuel trucks coming from Aarhus harbour.

A3 – Manufacturing processes

The module A3 raw material is processed by conveyor belts, fraction separators and crushing machines. The main resources used in this stage are diesel consumption for the building machines and electricity for some of the stationary machinery (production equipment).

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, and waste processing up to

the ”end-of-waste” state or final disposal. The LCA results are declared separately for the A1, A2, and A3 modules, as well as in an aggregated form for the product stage. This means that the sub-modules A1, A2, and A3 are combined and declared as a single module, A1-A3.

Construction process stage (A4-A5) includes:

In the A4 module, transport is managed by the customer, who collects the materials themselves. Nymølle Stenindustrier does not transport materials from the Katholm plant. All materials are delivered "at the gate," thus A4 is considered as zero. Module A5 is not included in this EPD.

Use stage (B1-B7) includes:

Not included in this EPD.

End of Life (C1-C4) includes:

The modules C1, C2, C3, and C4 are included. Module D is based on the processes from the products A1-A3 modules and the Danish waste statistics.

In the C1 module, the materials are being excavated, resulting in diesel consumption.

The C2 module includes transport of the excavated materials to waste management. A transport distance of 35 km has been used based on a publication from the European Commission 2024 titled: ”*EU construction & demolition waste management protocol including guidelines for pre-demolition and pre-renovation audits of construction works*”

In the C3 module there is no environmental impact associated with the waste processing stage, as all products are utilized in construction work. The product can be reused directly, eliminating the need for crushing or any additional processing.

The C4 module includes final disposal of waste. The distribution of materials sent to landfill are based on Dansk Affaldsstatistik 2022. The national statistic highlights the distribution of soil and stone aggregates for landfill and recycling/reuse which are used for the products.

In the statistic it is stated that 13.7% of soil and stone aggregates is sent to landfill.

Re-use, recovery and recycling potential (D) includes:

In the D-module benefits and loads beyond the life cycle are included. For material being reused, the fraction from Dansk Affaldsstatistik 2022 is used which is 86.3% of the aggregates.

D module is based on the product’s corresponding process in the production (A1-A3) stage, as the product can be reused with equal quality to newly produced products. Thus, the D module is the production A1-A3 multiplied by the reuse rate of 86.3%.

LCA results

Table 1- Core environmental impact indicators

ENVIRONMENTAL IMPACTS PER ton of Stabilgrus										
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	[kg CO_2 eq.]	4.03E-01	9.48E-03	3.83E+00	4.24E+00	3.40E-01	6.66E+00	0.00E+00	8.09E-01	-3.66E+00
GWP-fossil	[kg CO_2 eq.]	4.03E-01	9.47E-03	3.83E+00	4.24E+00	3.40E-01	6.65E+00	0.00E+00	8.07E-01	-3.66E+00
GWP-biogenic	[kg CO_2 eq.]	1.38E-04	6.56E-06	9.52E-04	1.10E-03	1.11E-04	4.61E-03	0.00E+00	2.07E-03	-9.46E-04
GWP-luluc	[kg CO_2 eq.]	3.61E-05	3.14E-06	3.20E-04	3.59E-04	3.61E-05	2.21E-03	0.00E+00	1.29E-04	-3.10E-04
GWP-GHG	[kg CO_2 eq.]	4.03E-01	9.47E-03	3.83E+00	4.24E+00	3.40E-01	6.65E+00	0.00E+00	8.07E-01	-3.66E+00
ODP	[kg CFC 11 eq.]	7.91E-09	1.88E-10	7.24E-08	8.05E-08	6.39E-09	1.32E-07	0.00E+00	3.01E-08	-6.94E-08
AP	[mol H^+ eq.]	3.52E-03	1.97E-05	3.27E-02	3.63E-02	2.92E-03	1.39E-02	0.00E+00	5.02E-03	-3.13E-02
EP-freshwater	[kg P eq.]	1.29E-05	6.41E-07	1.71E-04	1.85E-04	1.47E-05	4.50E-04	0.00E+00	3.67E-05	-1.59E-04
EP-marine	[kg N eq.]	1.64E-03	4.74E-06	1.51E-02	1.68E-02	1.35E-03	3.33E-03	0.00E+00	2.15E-03	-1.45E-02
EP-terrestrial	[mol N eq.]	1.79E-02	5.11E-05	1.66E-01	1.84E-01	1.48E-02	3.59E-02	0.00E+00	2.35E-02	-1.58E-01
POCP	[kg NMVOC eq.]	5.48E-03	3.28E-05	5.01E-02	5.56E-02	4.50E-03	2.30E-02	0.00E+00	9.48E-03	-4.80E-02
ADPm[1]	[kg Sb eq.]	1.89E-07	3.08E-08	1.52E-06	1.74E-06	1.53E-07	2.16E-05	0.00E+00	1.01E-06	-1.50E-06
ADPf[1]	[MJ]	5.30E+00	1.33E-01	4.93E+01	5.48E+01	4.38E+00	9.35E+01	0.00E+00	2.01E+01	-4.73E+01
WDP[1]	[m^3 world eq. deprived]	1.76E-02	5.53E-04	1.47E-01	1.65E-01	1.15E-02	3.88E-01	0.00E+00	6.95E-02	-1.42E-01
Caption	GWP-total = Globale Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; GWP-GHG = Global Warming Potential - Greenhouse Gas; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water depletion potential									
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.									

Table 2 – Additional environmental impact indicators

ADDITIONAL ENVIRONMENTAL IMPACTS PER ton of Stabilgrus										
Parameter	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	[Disease incidence]	1.00E-07	6.97E-10	9.24E-07	1.02E-06	8.30E-08	4.90E-07	0.00E+00	1.27E-07	-8.84E-07
IRP[2]	[kBq U235 eq.]	3.76E-03	1.73E-04	5.08E-02	5.47E-02	3.56E-03	1.21E-01	0.00E+00	1.72E-02	-4.72E-02
ETP-fw[1]	[CTUe]	6.85E-01	3.62E-02	6.41E+00	7.13E+00	8.70E-01	2.55E+01	0.00E+00	2.05E+00	-6.15E+00
HTP-c[1]	[CTUh]	1.57E-09	6.72E-11	1.45E-08	1.61E-08	2.24E-09	4.72E-08	0.00E+00	3.39E-09	-1.39E-08
HTP-nc[1]	[CTUh]	7.01E-10	8.36E-11	6.98E-09	7.76E-09	6.66E-10	5.87E-08	0.00E+00	2.96E-09	-6.69E-09
SQP[1]	-	3.61E-01	8.05E-02	3.42E+00	3.87E+00	3.20E-01	5.65E+01	0.00E+00	4.07E+01	-3.33E+00
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality									
Disclaimers	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. [2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents. occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil. from radon and from some construction materials is also not measured by this indicator.									

Table 3 - Parameters describing resource use

RESOURCE USE PER ton of Stabilgrus										
Parameter	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	4.30E-02	2.21E-03	5.04E-01	5.49E-01	4.35E-02	1.56E+00	0.00E+00	3.87E-01	-4.73E-01
PERM	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.30E-02	2.21E-03	5.04E-01	5.49E-01	4.35E-02	1.56E+00	0.00E+00	3.87E-01	-4.73E-01
PENRE	[MJ]	5.30E+00	1.33E-01	4.93E+01	5.48E+01	4.38E+00	9.35E+01	0.00E+00	2.01E+01	-4.73E+01
PENRM	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.30E+00	1.33E-01	4.93E+01	5.48E+01	4.38E+00	9.35E+01	0.00E+00	2.01E+01	-4.73E+01
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	3.66E-04	2.00E-05	3.59E-03	3.97E-03	3.84E-04	1.41E-02	0.00E+00	2.14E-02	-3.43E-03
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water									

Table 4 – End-of-life (waste categories and output flows)

WASTE CATEGORIES AND OUTPUT FLOWS PER ton of Stabilgrus										
Parameter	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	4.94E-05	3.34E-06	4.52E-04	5.05E-04	4.23E-05	2.34E-03	0.00E+00	2.88E-04	-4.36E-04
NHWD	[kg]	3.46E-03	6.43E-03	3.20E-02	4.19E-02	3.50E-03	4.52E+00	0.00E+00	1.37E+02	-3.62E-02
RWD	[kg]	9.36E-07	4.29E-08	1.26E-05	1.36E-05	8.86E-07	3.01E-05	0.00E+00	4.05E-06	-1.17E-05
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.63E+02	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy									

Table 5- Biogenic carbon content at factory gate

BIOGENIC CARBON CONTENT PER [ton]		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	0
Biogenic carbon content in accompanying packaging	[kg C]	0

Additional information

LCA interpretation

The results for the life cycle stage Production (A1-A3) showed that the manufacturing processes (A3) have the largest impact on the environmental impact indicator: GWP-total. This is mainly due to diesel production and diesel consumption.

The environmental impact categories are significantly influenced by the impact of the C1-C4 modules. This is because the transport process in C2 has a large impact on the End-of-Life stages. The C3 module does not have an impact, as there is no crushing or other process involved. The C4 module, which includes waste management through landfill, has the second largest impact among the End-of-Life modules.

Technical information on scenarios

End of life (C1-C4)

Scenario information	Value	Unit
Collected separately	1000	kg
Collected with mixed waste	0	kg
For reuse	863	kg
For recycling	0	kg
For energy recovery	0	kg
For final disposal (landfill)	137	kg
Assumptions for scenario development		As appropriate

Re-use, recovery and recycling potential (D)

Scenario information/Materiel	Value	Unit
Displaced material	863	kg
Energy recovery from waste incineration	0	MJ

Indoor air

The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.1.

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.2.

References

Publisher	www.epddanmark.dk Template version 2024.2
Programme operator	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA-practitioner	Emil Thomsen Øberg Aleksandra Rudzka Sweco Danmark, Ørestad Boulevard 41, 2300 København S Denmark
LCA software /background data	LCA SimaPro software 9.6.0.1 Developer Generic data and background data is primarily based on data from the Ecoinvent database version 3.10 (Ecoinvent. 2024). EN 15804 reference package 3.1
3rd party verifier	*Guangli Du* *Department of the Built Environment* *Aalborg University, Denmark* Verified according to Verification Checklist 1 v. 2.8

General programme instructions
General Programme Instructions, version 2.0, spring 2020
www.epddanmark.dk

EN 15804
DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

EPD International
Product Category Rules (PCR) 2019:14 – Construction products v1.3.4

EN 15942
DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

ISO 14025
DS/EN ISO 14025:2010 – ” Environmental labels and declarations – Type III environmental declarations – Principles and procedures”

ISO 14040
DS/EN ISO 14040:2008 – ” Environmental management – Life cycle assessment – Principles and framework”

ISO 14044
DS/EN ISO 14044:2008 – ” Environmental management – Life cycle assessment – Requirements and guidelines”